

REMARKS

The Examiner's communication mailed March 22, 2005 has been received and carefully considered. In conformance with the applicable statutory requirements, this paper constitutes a complete reply and/or a bona fide attempt to advance the application to final action. Specifically, claims 1, 5, 6, 22, 24, 30, 34, and 35 have been amended and claims 38-43 have been added. In addition, detailed arguments in support of patentability are presented. Reexamination and/or reconsideration of the application as amended are respectfully requested.

Summary of the Office Action

Claims 28 and 29 are indicated as being rejected on page 1 of the Office Action (the Office Action Summary), but no detailed treatment of these claims is included in the Office Action, including an indication of what references are being applied to these claims and supporting reasoning related to such references.

Claims 24-27 and 30-33 stand rejected under 35 U.S.C. § 112, second paragraph.

Claims 1-5, 7, 8, 10, 11 and 13-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hartmann (U.S. Patent No. 2,719,275) "taken with" Lisin et al. (U.S. Patent No. 4,338,657).

Claims 6, 9, 12 and 22-23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hartmann taken with Lisin et al., and further in view of Blankenship (U.S. Patent No. 5,351,175).

Claims 34-37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Blankenship.

35 U.S.C. §112

Claims 24 and 30 (claims 25-27 depend from claim 24 and claims 31-33 depend from claim 30) have been carefully amended to overcome the §112 indefiniteness rejections.

The Claims Distinguish Patentably
Over the Reference(s) of Record

Claim 1, as amended, calls for a module forming the secondary winding of a high frequency transformer to include conductive tubes that each have a central elongated passage accommodating one or more primary windings. The Examiner rejects claim 1 over the combination of Hartmann and Lisin et al. The Examiner concedes that Hartmann fails to disclose a primary winding in the central elongated passage of each of the tubes, but asserts that “it would have been obvious to have placed the primary ‘f’ in Hartmann (2,719,275) in any convenient location in lieu of that explicitly shown in Hartmann (2,719,275).” *Office Action* at pg. 3. The Examiner further asserts that “it would have been obvious to have placed the primary in the central tube of Hartmann (2,719,275), the motivation being the teachings of Lisin et al. (4,338,657) that it is advantageous to position a primary winding in the central passage of stacked tubular cores in a transformer.” *Id.* citing figure 3, element 11 of Lisin et al.

Applicant respectfully asserts that the combination of Hartmann and Lisin et al. (hereinafter, Lisin) is improper and further asserts that the Examiner has not provided adequate motivation to combine the teachings of Lisin with the teachings of Hartmann. Specifically, Applicant asserts that the asserted motivation (“that it is advantages to position a primary winding in the central passage of stacked tubular cores in a transformer”) is inadequate to support the combination of Hartmann and Lisin and fails to provide a proper/adequate motivation to combine these references necessary to support an obviousness rejection.

The Examiner disingenuously attempts to find motivation by asserting that (i) it would be obvious to have placed the Hartmann primary “f” in any convenient location in lieu of that explicitly shown in Hartmann and (ii) motivation is the teachings of Lisin “that that it is advantageous to position a primary winding in the central passage of stacked tubular cores in a transformer (citing Figure 3, element 11 of Lisin). First, “any convenient location” would not include in central elongated passages of tubes a2,a4,a6,a8 and a1,a3,a5,a7. Hartmann discloses that its tubes are contained within tank T which is filled with insulating oil (See Col. 3, lines 5-25). The oil is disclosed as being circulated through the tubes (*Id.*). It is inconceivable that a “convenient location” would be one requiring the entire tank T to

be modified and require an entirely different arrangement for containing the tank's insulating oil.

Second, the mere disclosure in Lisin of a primary winding 1 running through stacked cores 9 does not support the Examiner's statement that Lisin teaches that it is advantageous to position a primary winding in a central passage of stacked tubular cores (element 11 refers to one each three flat rectangular coils together comprising the primary winding 1). Even if Lisin did teach that such an arrangement was "advantageous," this does not show why one skilled in the art would be motivated to modify the arrangement of Hartmann, including the tank T full of insulating oil, to arrive at the invention of claim 1. If anything, the structure disclosed in Hartmann would teach away from the modification suggested by the Examiner because of the difficulty in modifying the tank T.

Applicant asserts that the Examiner has failed to provide any motivation for modifying Hartmann. Merely stating that it would be obvious to place an element in any convenient location in lieu of what is illustrated fails to explain why such modification would be obvious. Likewise, merely finding an element disclosed in another reference (such as the primary winding in Lisin) fails to disclose why one skilled in the art would modify another reference (such as Hartmann) to include such an element. As the Examiner is aware, a *prima facie* case of obviousness is not established absent proper motivation. Motivation is not found simply because the Hartmann transformer could be modified to include a primary winding within central elongated passages of first and second conductive tubes.

According to MPEP § 2144.01, the "fact that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish *prima facie* obviousness." Merely because the claimed elements are individually found in the prior art, it does not necessarily follow that it would be obvious to combine the elements from different prior art references. See MPEP § 2141.01 citing *Ex parte Levengood*, 28 USPQ 2d 1300 (Bd. Pat. App. & Inter. 1993). Consequently, absent a motivation to combine and modify Hartmann with the teachings of Lisin, it is irrelevant that the elements and/or limitations may be individually or separately known in the prior art. Clearly, the Examiner is motivated to combine these teachings for no other reason than to arrive at the claimed invention of original claim 1. This is a classic example of impermissible hindsight.

Accordingly, for at least these reasons, it is submitted that claim 1 and **claims 2-17** dependent therefrom distinguish patentably over the references of record.

Applicant would like to highlight the limitation contained in each of dependent claims 2 and 3 calling for a nose piece over the jumper strap of claim 1 with a guide surface between the central passages of the parallel tubes. Neither these claims, nor this limitation, appears to have been addressed by the Examiner in the Office Action to which this paper is responsive. Accordingly, examination of these claims is respectfully requested, including, if their rejection is maintained, a detailed explanation of how the nose piece with a guide surface limitation is met by the applied references. Applicant further submits that any continued substantive rejection of these claims, as opposed to an indication of containing allowable subject matter, should not be made final because Applicant has yet to given an opportunity to fairly respond to the Examiner's rejection of these claims.

Applicant would also like to highlight the limitation contained in each of dependent claims 6, 9 and 12 calling for the second end of one of the first and second tubes and one end of one of the third and fourth tubes to be connected to a rectifier. The Examiner rejected these claims, along with independent claim 22 over the triple combination of Hartmann, Lisin and Blankenship. As discussed in more detail in reference to claim 22, Applicant challenges the combination as being improper. Moreover, Applicant asserts that Blankenship fails to disclose a module connected to a rectifier, as Blankenship does not teach a module forming the secondary winding of a high frequency transformer.

Claim 18 calls for a module forming the secondary winding of a high frequency transformer to include a first coaxial set of concentric, telescoped conductive tubes and a second coaxial set of concentric, telescoped conductive tubes, wherein the sets each have an elongated central passage for accommodating at least one primary winding. The Examiner rejected claim 18 using the same reasoning as applied to claim 1. The arguments presented by Applicant concerning claim 1 are incorporated herein in response to the rejection of claim 18, namely, that the combination of Hartmann and Lisin is improper and no motivation to modify Hartmann has been provided.

Accordingly, for at least these reasons, it is submitted that claim 18 and **claims 19-21** dependent therefrom distinguish patentably over the references of record.

Applicant would like to highlight the limitations contained in dependent claims 20 and 21 calling for the conductive tubes to be formed by an elongated ribbon helixed around a central axis of the tube. The Examiner concedes that Hartmann and Lisin together fail to disclose this limitation, but asserts that it would have obvious to form the tubes in Hartmann in any conventional manner, including the use of a spiral approach as claimed. Applicant respectfully asserts that the Examiner has failed to establish a *prima facie* case of obviousness with respect to this claim limitation. As discussed at length above, merely because something could be done or is otherwise found in the prior art does not make it obviousness or support why one skilled in the art would be motivated to modify a particular reference. Obviousness and motivation to modify require something more. The Examiner must support his conclusion that this claim limitation is obvious or withdrawal the claim rejection.

Claim 22 calls for an electric arc welder comprising a high switching frequency inverter for driving the primary of an output transformer, wherein the output transformer has a plurality of modules forming secondary windings of the transformer. Claim 22 further calls for the modules to include first and second coaxial sets of concentric, telescoped conductive tubes each having an elongated central passage accommodating the primary. The Examiner partially relies on his rejection of claim 1 (combining Hartmann and Lisin et al.) to reject claim 22, but concedes that the Hartmann-Lisin combination fails to disclose "the provision for limitations associated with an electric arc welder." *Office Action* at pg. 4. The Examiner goes on to state:

These differences [only one difference appears to apply to claim 22] do not patentably distinguish over the prior art. The patent to Blankenship (5,351,175) teaches an electric arc power supply with an inverter feeding a transformer and in turn supplying rectifiers. ... [I]t would have been obvious to have used the transformer structure taught by Hartmann (2,719,275) and Lisin et al. (4,338,657) as discussed above, the motivation being the teachings of Hartmann (2,719,275) that his transformer can advantageously be used with inverters (see column 1 of Hartmann (2,719,275)), thereby satisfying the claims.

Id.

For the reasons discussed in reference to claim 1, Applicant challenges the combination of Hartmann and Lisin as applied to claim 22. Applicant further notes that claim 22 calls for two coaxial sets of concentric tubes. The arrangement disclosed in Lisin does not appear to disclose any sets of coaxial concentric tubes, as called for in claim 22; thus, Applicant asserts that the combination, already challenged as improper in reference to claim 1, is even more tenuous as applied to claim 22.

Moreover, Applicant asserts that the addition of the third reference, Blankenship, is also improper. Blankenship is explicitly mentioned in Applicant's specification as showing a representative transformer circuit. See *Specification* at pg. 1. Applicant respectfully asserts that merely because Hartmann discloses switch choke coils employable in high voltage inverters, as asserted by the Examiner, motivation to apply the combination of Hartmann and Lisin to the teachings of Blankenship is not found. Moreover, Applicant asserts that claim 22 is directed to an electric arc welder comprising a high switching frequency inverter. Nothing has been cited in Hartmann or otherwise provided to show why one skilled in the art would apply the combined teachings (flawed as they are) of Hartmann and Lisin to an electric arc welder comprising a high switching frequency inverter.

Moreover, claim 22 calls for the output transformer to include a plurality of modules forming the secondary windings of the transfer. The Examiner has failed to even allege that the combination of Hartmann, Lisin and Blankenship teaches or fairly suggests an output transformer including a plurality of modules as claimed in claim 22. Applicant preemptively challenges any assertion by the Examiner that the arrangement disclosed in Hartmann could be duplicated and employed as a plurality of modules. Specifically, Applicant asserts that the primary of the output transformer of claim 22 is incapable of extending into the central passages of Hartmann because they are enclosed by tank T and using a plurality of Hartmann choke coil/transformers would not permit a primary to be accommodated in the central passages of the plurality of modules, at least because tank T would obstruct such an arrangement.

Accordingly, for at least these reasons, Applicant submits that claim 22 and dependent **claim 23** distinguish patentably over the references of record.

Like claims 2 and 3, it appears that the Examiner has not even addressed the limitation(s) presented in claim 23. Accordingly, examination of claim 23 is respectfully

requested, including, if the rejection is maintained, a detailed explanation of how the tubes of the modules of claim 22 are shown in the references of record to each be connected to a rectifier to create a positive and negative current output and a circuit connecting the outputs in parallel, as claimed in claim 23. Applicant further submits that any continued substantive rejection of claim 23, as opposed to an indication of containing allowable subject matter being contained in claim 23, should not be made final because Applicant has yet to given an opportunity to fairly respond to the rejection of claim 23.

Claim 24 was not substantively rejected over any of the references of record. Accordingly, since the §112 rejection has been properly overcome herein, Applicant submits that claim 24 and **claims 25-27** dependent therefrom are now in condition for allowance.

As indicated above, independent **claim 28** and **dependent claim 29** were only indicated as being rejected in the Office Action Summary (page 1 of the Office Action). No references were applied against claims 28 and 29 and no reasons were provided as to why claims 28 and 29 stand rejected. Accordingly, Applicant requests the Examiner withdrawal the rejection of claims 28 and 29. Alternatively, should the Examiner choose to maintain the rejection of these claims, Applicant requests detailed treatment be provided, including identification of the references cited thereagainst and reasoning supporting the application of such references against claims 28 and 29. Further, Applicant submits that any continued rejection of claims 28 and 29 SHOULD NOT be made final because Applicant has yet to given an opportunity to fairly respond to the Examiner's rejection of these claims.

Claim 30, like claim 24, was not substantively rejected over any of the references of record. Accordingly, since the §112 rejection has been properly overcome herein, Applicant submits that claim 30 and **claims 31-33** dependent therefrom are now in condition for allowance.

Claim 34, as amended, calls for a high frequency transformer for an electric arc welder with an inverter power source, wherein the transformer includes a number of modules readily removable from one another and each contains a secondary winding section. Claim 34 further calls for each section to be interconnected and a primary winding through each of the modules. The Examiner rejected previously presented claim 34 as being obvious over Blankenship. The Examiner concedes that the claims differ in calling for the transformer to include "modules." *Office Action* at pg. 4. However, the Examiner

states that the term “module” does not have any specific structural meaning that would distinguish over the two secondary windings in Blankenship. *Id.* The Examiner further states that “[i]t is considered obvious that these separate windings are in some sense “modules” because they are distinct entities.

Applicant respectfully disagrees, but to more efficiently place claim 34 in condition for allowance, Applicant has amended claim 34 to call for modules that are readily removable from one another (i.e., a clear structural distinction). Blankenship fails to disclose such an arrangement. Accordingly, for at least this reason, Applicant submits that claim 34 distinguishes patentably over the references of record.

Claim 35 calls for a power source for electric arc welding to include a high switching speed inverter for driving the primary of an output transformer with AC primary current. The transformer is claimed to have a number of modules each with a given current capacity forming the secondary winding of the output transformer and the modules are claimed as being connected in parallel with the total output welding current being the sum of the current capacities of the separate modules. Claim 35 was rejected as obvious over Blankenship for the same reasoning that was provided to reject claim 34 (discussed above). Specifically, the Examiner asserts that the term “module” does not have any specific structural meaning that would distinguish over the two secondary windings of Blankenship.

Applicant respectfully disagrees. The modular arrangement called for in claim 35 is fully supported by Applicant’s specification. Employing modules allows production of a highly coupled transformer with a very compact construction and enhanced heat dissipation characteristics. *See Specification* at pg. 2. Accordingly, for at least this reasons, Applicant submits that claim 35 and **claims 36-37** dependent therefrom distinguish patentably over the references of record.

New **claims 38-43** have been added. Detailed examination of these claims is respectfully requested.

CONCLUSION

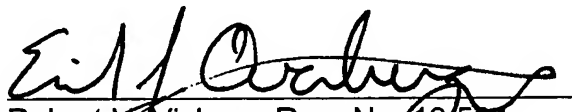
All formal and informal matters having been addressed, it is respectfully submitted that this application is in condition for allowance. Alternatively, if the Examiner is of the view that the application is not in clear condition for allowance, it is requested that he

telephone the undersigned for purposes of conducting a telephone interview to resolve any outstanding differences. In any case, an early notice of allowance is earnestly solicited.

Respectfully submitted,

FAY, SHARPE, FAGAN,
MINNICH & McKEE, LLP

May 9, 2005
Date

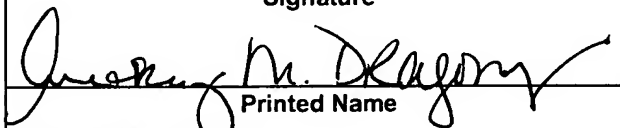

Robert V. Vickers, Reg. No. 19,504
Erik J. Overberger, Reg. No. 48,556
1100 Superior Avenue
7th Floor
Cleveland, Ohio 44114-2579
(216) 861-5582

Certificate of Mailing

Under 37 C.F.R. § 1.8, I certify that this Amendment is being

- ☒ deposited with the United States Postal Service as First Class mail, addressed to: MAIL STOP AMENDMENT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date indicated below.
- ☐ transmitted via facsimile in accordance with 37 C.F.R. § 1.8 on the date indicated below.
- ☐ deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on the date indicated below and is addressed to: MAIL STOP AMENDMENT, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Express Mail Label No.:
Date
May 9, 2005

Signature

Printed Name
Audrey M. Dragony